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SOUTH FLORIDA WATER MANAGEMENT MODEL V5.0
INPUT FILE DOCUMENTATION

"lok_wca_oper_sched.dat"

INPUT DATA FOR OPERATIONAL SCHEDULE FOR LAKE OKEECHOBEE, APPROPRIATE WCAS, HOLEYLAND, AND ROTENBERGER TRACT.
ANY PROPOSED CALENDAR BASED OPERATIONAL SCHEDULE FOR ADDITIONAL RESERVOIR(S) MAY BE INPUT.

INPUT FILE UNIT NO. 102 IS READ IN SUBROUTINE OPER_SCHED_DATA.F

COLS.	VAR.NAME	FORMAT	DESCRIPTION
	1. BASIC NUMBER OF AREAS WITH OPERATIONAL SCHEDULES: (1 record total)		
	n_stor_areas	free	number of storage areas (LOK plus WCAs with operational schedules)
	no_add_areas_to_wcas	free	no of areas in addition to LOK and WCAs (e.g. Holeyland, Rotenberger, etc.)
	BEGIN n_stor_areas loop for each i, 1 to n_stor_areas; see NOTE_n_stor_areas		
	2. AREA NAME AND ZONE DEFINITIONS FOR LOK OR WCAS (1 record total)		
1−6	stor_area_name(i)	A6	name of area
7−8	blank	2X	
9−13	nzone(i)	I5	total number of operational lines for area
14−18	itop_zone_indx(i)	I5	index for line of highest zone of schedule
19−23	ibot_zone_indx(i)	I5	index for line of bottom zone of schedule
24−28	ialt_bot_zone_indx(i)	I5	index for line of alternative bottom zone of schedule (deviation from normal ops)
29−33	ibot_zone_indx_s333reg(i)	I5	index for bottom of schedule for S333 reg releases thru S−334 − index is the number corresponding to the position the line is input for storage area (−901 means index does not apply)

34–38	ifloor_line_indx(i)	I5	index for floor elevation line

3. LAKE OKEECHOBEE OPERATIONAL OPTIONS (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK ***

1–	iclimate_opt	free	option for using global climate indicators in operation of LOK (1–yes, 0–no)
	itrib_hydro_cond_opt	free	option for using local hydrologic conditions in LOK operations (1–yes, 0–no)
	multi_seas_pred_opt	free	option for using multi–seasonal forecast of ENSO in LOK operations (1–yes, 0–no)
	izone_flex_eaares_opt	free	option to use flexibility in using LOK tributary conditions to divert excess LOK water to EAA Reservoir and/or North Storage Reservoir
	iflex_clim_lokreg_to_calstlres	free	option to use flexibility in using climate predictors in routing excess water to proposed Caloos and ST lucue reservoirs (1–yes, 0–no)

4. LAKE OKEECHOBEE FLOOD CONTROL AND PULSE ZONE DEFINITIONS (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK ***

1	blank	1X	
2–4	n_fc_zones	I3	no of flood control zones
5–7	no_puls_zones	I3	no_of_pulse_zones
8–10	mzone_puls_top	I3	zone number of top pulse zone
11–13	mzone_puls_bot	I3	zone number of bottom pulse zone
14–16	izone_bot_flood_flows_south	I3	bottom zone number for unconditional flood flows south to WCAs
17–19	iflex_pulse_opt	I3	flexibility option in operation of pulse releases (1–yes, 0–no)
20–22	iplsday	I3	number of days before today by which today’s stage will be compared against (min=0, max=10) to determine if pulse releases are going to be made
23–24	blank	2X	
25–30	opt_sim_lok_eaares	A6	option in releasing LOK water to EAA or other resevoir(s) where water cannot be retrieved (EXCESS or SURGET)

5. MEAN PULSE RELEASES FOR LAKE OKEECHOBEE PULSE ZONE OPERATIONS (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK ***

1–3	no_puls_levels	I3	no of levels of pulse releases

*** note: the following two fields are repeated on the same record for pulse level 1 to no_puls_levels ***

4–9	avg_pulse_release(k,1)	F6.0	mean pulse releases thru S–77 for pulse level k
10–15	avg_pulse_release(k,2)	F6.0	mean pulse releases thru S–80 for pulse level k

6. ADDITIONAL LAKE OKEECHOBEE OPERATIONAL THRESHOLDS (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK ***

1–7	s65e_inflw_thres_high(1)	F7.0	high threshold of s–65e avg daily inflows (cfs–day) for operations of LOK for wet conditions in the dry season
8–14	s65e_inflw_thres_high(2)	F7.0	high threshold of s–65e avg daily inflows (cfs–day) for operations of LOK for wet conditions in the wet season
15–21	s65e_inflw_thres_low(1)	F7.0	low threshold of s–65e avg daily inflows (cfs–day) for operations of LOK for wet conditions in the dry season
22–28	s65e_inflw_thres_low(2)	F7.0	low threshold of s–65e avg daily inflows (cfs–day) for operations of LOK for wet conditions in the wet season
29–35	trib_rfet_thres	F7.0	net tributary rainfall threshold above which to allow LOK to divert water to EAA Storage (used in conjunction with s65e_runff_wkly_thres)
36–42	s65e_runff_wkly_thres	F7.0	s65e inflow threshold above which to allow LOK to divert water to EAA Storage (used in conjunction with trib_rfet_thres)
43–49	clim_threshold_est(1)	F7.0	minimum multi–seasonal forecast of LOK inflow (million acre–ft) for LOK to be used to meet Estuarine demands when stage in LOK is above schedule
50–56	clim_threshold_est(2)	F7.0	minimum multi–seasonal forecast of LOK inflow (million acre–ft) for LOK to be used to meet Estuarine demands when stage in LOK is below schedule

7. RETURN FLOW FROM CALOOS AND ST. LUCIE RESERVIORS TO LAKE OKEECHOBEE (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK ***

1–7	cresbp_max_rate	F7.1	maximum rate (cfs) of backpumping to LOK from Caloos reservoir
8–14	cal_res_dpth_thres_bp	F7.1	depth threshold (ft) above which backpumping may occur
15–21	rmax_stl_res_bflw_cap	F7.1	maximum rate of backflow from C44 Reservoir to LOK

8. SSM CREDIT OPTIONS FOR LAKE OKEECHOBEE (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK ***

1–	ssm_vol_cutback_thres	free	threshold of credit (acre–ft) for SSM in LOSA
	month_END_credit	free	last month credit is issued (1–Jan, 2–Feb, etc.)

9. LAKE OKEECHOBEE DEVIATION FROM NORMAL OPERATIONS (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK ***

1–	ibeg_mth_lokdev	free	beginning month (1–jan...) for LOK deviation from NORMAL ops
	ibeg_day_lokdev	free	beginning day for LOK deviation from NORMAL ops
	iend_mth_lokdev	free	beginning month for LOK NORMAL ops
	iend_day_lokdev	free	beginning day for LOK NORMAL ops
	iopt_drawdown	free	option for spring dwawdown of LOK (1–yes, 0–no)

10. OFFSET TO WCA REG SCHEDULES FOR REG RELEASES FROM LAKE OKEECHOBEE (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK ***

1–	offset_reg_to_wcas(1)	free	offset (in feet) to the downstream WCA schedule for determining regulatory releases from LOK to WCAs via Miami canal.
	offset_reg_to_wcas(2)	free	offset (in feet) to the downstream WCA schedule for determining regulatory releases from LOK to WCAs via NNRC canal.
	offset_reg_to_wcas(3)	free	offset (in feet) to the downstream WCA schedule for determining regulatory releases from LOK to WCAs via WPB canal.
	offset_reg_to_wcas(4)	free	offset (in feet) to the downstream WCA schedule for determining regulatory releases from LOK to WCAs via HILL canal.

BEGIN nzone(i) loop for LOK for each j, 1 to nzone(i); see NOTE_nzone(i)_LOK

11. FLOOD CONTROL ZONE or PULSE ZONE NAME FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and current zone is a flood control zone or pulse zone. ***

1–7	zoneid(j)	A7	Name for zone j

12. MAX CAPACITIES FOR S–77 AND S–80 FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and current zone is a flood control zone or pulse zone. ***

1–	rmax_out_capac_wet(j,1)	free	Maximum allowable discharge thru S–77(Caloos) for flood control during wet conditions.

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        rmax_out_capac_norm(j,1)      free    Maximum allowable discharge thru S-77(Caloos) for flood control during
                                                normal to dry conditions.
        rmax_out_capac_wet(j,2)       free    Maximum allowable discharge thru S-80(St. Lucie) for flood control
                                                during wet conditions.
        rmax_out_capac_norm(j,2)      free    Maximum allowable discharge thru S-80(St. Lucie) for flood
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13. PULSE LEVEL SUBZONES FOR CURRENT ZONE FOR S-80 FOR LOK (1 record total)

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   ***  note: this record is read in only if stor_area_name(i) = LOK and current zone is a pulse zone  ***

1-      no_of_pulse_rel(iplslevel)    free    Duration in number of days of pulse release

   ***  note: the following field is repeated on the same record for k=1 to no_of_pulse_rel(iplslevel)  ***

        qplsl(iplslevel,k)            free    Pulse releases (cfs-day) to be made thru S-80 into St. Lucie Estuary
                                                for day k
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14. PULSE LEVEL SUBZONES FOR CURRENT ZONE FOR S-77 FOR LOK (1 record total)

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   ***  note: this record is read in only if stor_area_name(i) = LOK and current zone is a pulse zone  ***

   ***  note: the following field is repeated on the same record for k=1 to no_of_pulse_rel(iplslevel)  ***

1-      qplsl(iplslevel,k)            free    Pulse releases (cfs -day) to be made thru S-77 into Caloosahatchee River
                                                for day k

   ***  note: for each level pulse subzone in current zone, records 13 and 14 are repeated. (total number   ***
   ***        of pulse subzones for all pulse zones input (combined) must equal no_puls_levels)             ***
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15. BREAKPOINT DAYS FOR PULSE AND/OR FLOOD CONTROL ZONES FOR LOK (1 record total)

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   ***  note: this record is read in only if stor_area_name(i) = LOK and  ***
             current zone is a flood control zone or a pulse zone.       ***

1-      nbrkpt(i,j)                   free    number of breakpoints in schedule for bottom of zone
        mthreg(k)                     free    month of breakpoint day
        idayreg(k)                    free    day of breakpoint day

   ***  note: mthreg(k) and idayreg(k) are repeatedly read in alternating succession for   ***
   ***        the current record up to nbrkpt(i,j) number of pairs. These months and days  ***
   ***        are then used to populate the iregjul(i,j,k) array in julian format.         ***
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16. BREAKPOINT STAGES FOR PULSE AND/OR FLOOD CONTROL ZONES FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

1–	regstg(i,j,k)	free	stage value of breakpoint day read from 1 to nbrkpt(i,j) corresponding to dates above

17. REGULATORY RELEASES CONVEYANCE OPTIONS FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

1–4	eaa_conv_opt_reg(1,j,1)	A4	Option in conveyance of regulatory discharges from LOK to WCA via Miami Canal and S–8. (PUMP – pump regulatory discharges thru S8 into WCA at all times, GRAV – route discharges by gravity thru S8 spillway. The use of the pumps may be conditional.) Maximum 4 characters.
5–6	blank	2X	
7–10	eaa_conv_opt_reg(2,j,1)	A4	Option in conveyance of regulatory discharges from LOK to WCA via NNR Canal and S–7. (PUMP – pump regulatory discharges thru S7 into WCA all times, GRAV – route discharges by gravity thru S7 spillway. The use of the pumps may be conditional.) Maximum 4 characters.
11–12	blank	2X	
13–16	eaa_conv_opt_reg(1,j,2)	A4	Option in conveyance of regulatory discharges from LOK to WCA via Miami Canal and S–8 for DEVIATION from normal ops.
17–18	blank	2X	
19–22	eaa_conv_opt_reg(2,j,2)	A4	Option in conveyance of regulatory discharges from LOK to WCA via NNR Canal and S–7 for DEVIATION from normal ops
23–24	blank	2X	
25–30	rmin_clim_indx_thres(j,1,1)	F6.2	The minimum threshold of PREDICTED total inflow into LOK for the NEXT SIX months (in millions of acre–ft) for lesser discharges thru S–77 and S–308, whether steady flow or pulse releases. Values of PREDICTED 6–month total inflow into LOK less than this threshold results in no outflow thru S–77 or S–308 for flood control purposes. –901. means threshold not used.
31–36	rmin_clim_indx_thres(j,2,1)	F6.2	The minimum threshold of PREDICTED total inflow into LOK for the NEXT SIX months (in millions of acre–ft) for operation of S–77 and S–308 for MAXIMUM FLOOD PROTECTION for LOK. PREDICTED values vary monthly. –901. means threshold not used.
37–42	frac_depth_zone(j,1)	F6.2	Fraction of the total depth of zone during dry season the maximum allowable discharge thru S–77 and S–80 for that zone begins to occur. This is used only if user wants gradually increasing discharges thru S–77 and S–80 as a function of LOK stage within a particular zone(s). Model assumes a linear function.

43−48	frac_depth_zone(j,2)	F6.2	Fraction of the total depth of zone during wet season the maximum allowable discharge thru S−77 and S−80 for that zone begins to occur. This is used only if user wants gradually increasing discharges thru S−77 and S−80 as a function of LOK stage within a particular zone(s). Model assumes a linear function.
49−53	ipulse_level_in_zone(j)	I5	Level of Pulse releases when pulse releases are called for in zone (0 − default,PULSE releases never occur in zone; 1 − level 1 Pulse releases when appropraite, 2 − Level 2 Pulse release when appropriate, 3 − Level 3 Pulse release when appropriate). If input is −901, then level of pulse releases can vary with multi−seasonal forecast and/or tributary hydrology in zone and is input later.
54−58	iopt_for_interp(j)	I5	Option to simulate gradually increasing discharges thru S−77 and S−80 for flood control purposes. Linear function used. (1 − sumulate gradually increasing discharges, 0 − do NOT simulate gradually increasing discharges)
59−60	blank	2X	
61−67	opt_for_pulsing(j)	A7	Option for lesser discharges thru S−77 and S−80 for flood control when appropriate (PULSE − want PULSE releases when conditions call for them, NOPULSE − want steady flow thru S−77 and S−308 which are input in first record). PULSE is input as default. This option is implemented only if operational schedule includes the use of forecasting of LOK inflow based primarily on global scale climate indicators and lake stage is above pulse zone(s).
68−72	igrav_sim_opt(1,j)	I5	Option for gravity as UNCONDITIONAL means of conveyance of regulatory releases from LOK to WCA via Miami Canal and S−8. (1 − Unconditional, 0 − Conditional, dependent on Everglades needs) Option applies only if GRAV is input for means of conveyance.
73−78	igrav_sim_opt(2,j)	I5	Option for gravity as UNCONDITIONAL means of conveyance of regulatory releases from LOK to WCA via NNR Canal and S−7. (1 − Unconditional, 0 − Conditional, dependent on Everglades needs) Option applies only if GRAV is input for means of conveyance.

*** note: The options for gravity and pumped flood flows from LOK to WCA(s) are only implemented if the *** *** STAs are not simulated. If STAs are simulated flood flows from LOK to WCAs are automatically *** *** pumped into STAs and treated before entering WCAs. NO FLOOD FLOWS FROM LOK BYPASS STAs. ***

*** note: For LOK schedules(e.g. RUN25) in simulation that do not use forecasting, additional constraints *** *** (which are currently implemented) are imposed due to high water levels in WCAs. Regulatory *** *** (flood control) releases from LOK to WCA−2A occur if stages in WCA2A and WCA3A do not violate *** *** high water criteria. Similarly,releases from LOK to WCA−1 occur if stages in WCA−1,WCA−2A,and *** *** WCA−3A do not violate high water criteria. ***

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18. NET RAINFALL BREAKPOINTS FOR OUTFLOW TO TIDE FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** *** current zone is a flood control zone or a pulse zone. ***

1–7	trib_rf_et_thres(1,j)	F7.2	Breakpoint 1 for Classification of Net Rainfall (past 4 weeks, in inches) in tributary region
8–14	trib_rf_et_thres(2,j)	F7.2	Breakpoint 2 for Classification of Net Rainfall (past 4 weeks, in inches) in tributary region
15–21	trib_rf_et_thres(3,j)	F7.2	Breakpoint 3 for Classification of Net Rainfall (past 4 weeks, in inches) in tributary region

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19. S65E INFLOW BREAKPOINTS FOR OUTFLOW TO TIDE FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

1–7	s65e_runff_thres(1,j)	F7.0	Breakpoint 1 for Classification of S65E inflows (cfs – 2 week avg)
8–14	s65e_runff_thres(2,j)	F7.0	Breakpoint 2 for Classification of S65E inflows (cfs – 2 week avg)
15–21	s65e_runff_thres(3,j)	F7.0	Breakpoint 3 for Classification of S65E inflows (cfs – 2 week avg)

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20. CLASSIFICATION OF TRIBUTARY CONDITIONS FOR OUTFLOW TO TIDE FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

1–5	no_of_categ	I5	Number of Classifications
6–7	blank	2X	

*** note: the following two fields are repeated on the same record for classification(k) 1 to no_of_categ ***

8–14	cgen_trib_hydro_categ(k,j)	A7	Classifications of Tributary conditions defined by above breakpoints
15–16	blank	2X	

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21. PULSE RELEASES ASSOC. WITH TRIB COND FOR OUTFLOW TO TIDE FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

*** note: the following field is repeated on the same record for classification(k) 1 to no_of_categ ***

1–	ipulse_level_trib_hyd(k,j)	free	Level of Pulse release (1 – lowest, greater the number, greater the pulse release) for each classification of Tributary conditions (–99 means data not used in model)

*** note: if all values are –99 ,then level of pulse release is input earlier ***

22. SEASONAL INFLOW BREAKPOINTS FOR OUTFLOW TO TIDE FOR CURRENT ZONE FOR LOK DEVIATION OPS (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

1–7	rmin_clim_indx_thres(j,1,2)	F7.0	Breakpoint 1 for Classification of Seasonal forecast of LOK inflow (million acre–ft) for deviation from normal operations
8–14	rmin_clim_indx_thres(j,2,2)	F7.0	Breakpoint 2 for Classification of Seasonal forecast of LOK inflow (million acre–ft) for deviation from normal operations

23. MULTI SEASONAL INFLOW BREAKPOINTS FOR OUTFLOW TO TIDE FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

1–7	rmulti_seas_thres(1,j,1)	F7.0	Breakpoints 1 for Classification of multi–seasonal forecast of LOK inflow (million acre–ft) for NORMAL operations
8–14	rmulti_seas_thres(2,j,1)	F7.0	Breakpoints 2 for Classification of multi–seasonal forecast of LOK inflow (million acre–ft) for NORMAL operations
15–21	rmulti_seas_thres(3,j,1)	F7.0	Breakpoints 3 for Classification of multi–seasonal forecast of LOK inflow (million acre–ft) for NORMAL operations
22–28	rmulti_seas_thres(4,j,1)	F7.0	Breakpoints 4 for Classification of multi–seasonal forecast of LOK inflow (million acre–ft) for NORMAL operations

24. MULTI SEASONAL INFLOW BREAKPOINTS FOR OUTFLOW TO TIDE FOR CURRENT ZONE FOR LOK DEVIATION OPS (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

1–7	rmulti_seas_thres(1,j,2)	F7.0	Breakpoints 1 for Classification of multi–seasonal forecast of LOK inflow (million acre–ft) for deviation from normal operations
8–14	rmulti_seas_thres(2,j,2)	F7.0	Breakpoints 2 for Classification of multi–seasonal forecast of LOK inflow (million acre–ft) for deviation from normal operations
15–21	rmulti_seas_thres(3,j,2)	F7.0	Breakpoints 3 for Classification of multi–seasonal forecast of LOK inflow (million acre–ft) for deviation from normal operations
22–28	rmulti_seas_thres(4,j,2)	F7.0	Breakpoints 4 for Classification of multi–seasonal forecast of LOK inflow (million acre–ft) for deviation from normal operations

25. PULSE RELEASES ASSOC. WITH MULTI SEASONAL INFLOW FOR OUTFLOW TO TIDE FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

1–	ipulse_level_multi_seas(1,j,1)	free	Levels of Pulse Releases for Classification 1 defined by Multi–seasonal forecast for NORMAL operations (–901 means model does not use data)
	ipulse_level_multi_seas(2,j,1)	free	Levels of Pulse Releases for Classification 2 defined by Multi–seasonal forecast for NORMAL operations (–901 means model does not use data)
	ipulse_level_multi_seas(3,j,1)	free	Levels of Pulse Releases for Classification 3 defined by Multi–seasonal forecast for NORMAL operations (–901 means model does not use data)
	ipulse_level_multi_seas(4,j,1)	free	Levels of Pulse Releases for Classification 4 defined by Multi–seasonal forecast for NORMAL operations (–901 means model does not use data)

*** note: if all values are –901 then level of pulse releases is input earlier ***

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26. PULSE RELEASES ASSOC. WITH MULTI SEASONAL INFLOW FOR OUTFLOW TO TIDE FOR CURRENT ZONE FOR LOK DEVIATION OPS (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

1–	ipulse_level_multi_seas(1,j,2)	free	Levels of Pulse Releases for Classification 1 defined by Multi–seasonal forecast for deviation from normal operations (–901 means model does not use data)
	ipulse_level_multi_seas(2,j,2)	free	Levels of Pulse Releases for Classification 2 defined by Multi–seasonal forecast for deviation from normal operations (–901 means model does not use data)
	ipulse_level_multi_seas(3,j,2)	free	Levels of Pulse Releases for Classification 3 defined by Multi–seasonal forecast for deviation from normal operations (–901 means model does not use data)
	ipulse_level_multi_seas(4,j,2)	free	Levels of Pulse Releases for Classification 4 defined by Multi–seasonal forecast for deviation from normal operations (–901 means model does not use data)

*** note: if all values are –901 then level of pulse releases is input earlier ***

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27. CLASSIFICATION OF SEASONAL INFLOW FOR OUTFLOW TO TIDE FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

1–5	no_of_categ	I5	Number of Classifications
6–7	blank	2X	

*** note: the following two fields are repeated on the same record for classification(k) 1 to no_of_categ ***

8-14	cgen_seas_categ(k,j,1)	A7	Classifications of 6-month(seasonal) forecast of LOK inflow by above breakpoints for NORMAL operations
15-16	blank	2X	

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28. CLASSIFICATION OF SEASONAL INFLOW FOR OUTFLOW TO TIDE FOR CURRENT ZONE FOR LOK DEVIATION OPS (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and current zone is a flood control zone or a pulse zone. ***

1-5	no_of_categ	I5	Number of Classifications
6-7	blank	2X	

*** note: the following two fields are repeated on the same record for classification(k) 1 to no_of_categ ***

8-14	cgen_seas_categ(k,j,2)	A7	Classifications of 6-month(seasonal) forecast of LOK inflow by above breakpoints for deviations from normal operations
15-16	blank	2X	

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29. CLASSIFICATION OF MULTI SEASONAL INFLOW FOR OUTFLOW TO TIDE FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and current zone is a flood control zone or a pulse zone. ***

1-5	no_of_categ	I5	Number of Classifications
6-7	blank	2X	

*** note: the following two fields are repeated on the same record for classification(k) 1 to no_of_categ ***

8-14	cgen_multi_seas_categ(k,j,1)	A7	Classifications of multi-seasonal forecast of LOK inflow by above breakpoints for NORMAL operations
15-16	blank	2X	

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30. CLASSIFICATION OF MULTI SEASONAL INFLOW FOR OUTFLOW TO TIDE FOR CURRENT ZONE FOR LOK DEVIATION OPS (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and current zone is a flood control zone or a pulse zone. ***

1-5	no_of_categ	I5	Number of Classifications

6–7	blank	2X	

*** note: the following two fields are repeated on the same record for classification(k) 1 to no_of_categ ***

8–14	cgen_multi_seas_categ(k,j,2)	A7	Classifications of multi–seasonal forecast of LOK inflow by above breakpoints for deviations from normal operations
15–16	blank	2X	

31. NET RAINFALL BREAKPOINTS FOR OUTFLOW TO WCAS FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

1–7	trib_rf_et_thres_wca(1,j)	F7.1	Breakpoint 1 for Classification of Net Rainfall (past 4 weeks, in inches) in tributary region
8–14	trib_rf_et_thres_wca(2,j)	F7.1	Breakpoint 2 for Classification of Net Rainfall (past 4 weeks, in inches) in tributary region
15–21	trib_rf_et_thres_wca(3,j)	F7.1	Breakpoint 3 for Classification of Net Rainfall (past 4 weeks, in inches) in tributary region

32. S65E INFLOW BREAKPOINTS FOR OUTFLOW TO WCAS FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

1–7	s65e_runff_thres_wca(1,j)	F7.0	Breakpoint 1 for Classification of S65E inflows (cfs – 2 week avg)
8–14	s65e_runff_thres_wca(2,j)	F7.0	Breakpoint 2 for Classification of S65E inflows (cfs – 2 week avg)
15–21	s65e_runff_thres_wca(3,j)	F7.0	Breakpoint 3 for Classification of S65E inflows (cfs – 2 week avg)

33. CLASSIFICATION OF TRIBUTARY CONDITIONS FOR OUTFLOW TO WCAS FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

1–5	no_of_categ	I5	Number of Classifications
6–7	blank	2X	

*** note: the following two fields are repeated on the same record for classification(k) 1 to no_of_categ ***

8–14	cgen_trib_hydro_categ_wca(k,j)	A7	Classifications of Tributary conditions defined by above breakpoints
15–16	blank	2X	

34. SEASONAL INFLOW BREAKPOINTS FOR OUTFLOW TO WCAS FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and current zone is a flood control zone or a pulse zone. ***

1–7	rmin_clim_indx_thres_wca(1,j)	F7.0	Breakpoint 1 for Classification of Seasonal forecast of LOK inflow (million acre–ft)
8–14	rmin_clim_indx_thres_wca(2,j)	F7.0	Breakpoint 2 for Classification of Seasonal forecast of LOK inflow (million acre–ft)

35. CLASSIFICATION OF SEASONAL INFLOW FOR OUTFLOW TO WCAS FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and current zone is a flood control zone or a pulse zone. ***

1–5	no_of_categ	I5	Number of Classifications
6–7	blank	2X	

*** note: the following two fields are repeated on the same record for classification(k) 1 to no_of_categ ***

8–14	cgen_seas_categ_wca(k,j)	A7	Classifications of 6–month (seasonal) forecast of LOK inflow by above breakpoints
15–16	blank	2X	

36. MULTI SEASONAL INFLOW BREAKPOINTS FOR OUTFLOW TO WCAS FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and current zone is a flood control zone or a pulse zone. ***

1–7	rmulti_seas_thres_wca(1,j)	F7.0	Breakpoints 1 for Classification of multi–seasonal forecast of LOK inflow (million acre–ft)
8–14	rmulti_seas_thres_wca(2,j)	F7.0	Breakpoints 2 for Classification of multi–seasonal forecast of LOK inflow (million acre–ft)
15–21	rmulti_seas_thres_wca(3,j)	F7.0	Breakpoints 3 for Classification of multi–seasonal forecast of LOK inflow (million acre–ft)
22–28	rmulti_seas_thres_wca(4,j)	F7.0	Breakpoints 4 for Classification of multi–seasonal forecast of LOK inflow (million acre–ft)

37. CLASSIFICATION OF MULTI SEASONAL INFLOW FOR OUTFLOW TO WCAS FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

1–5	no_of_categ	I5	Number of Classifications
6–7	blank	2X	

*** note: the following two fields are repeated on the same record for classification(k) 1 to no_of_categ ***

8–14	cgen_multi_seas_categ_wca(k,j)	A7	Classifications of multi–seasonal forecast of LOK inflow by above breakpoints for NORMAL operations
15–16	blank	2X	

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38. ADDITIONAL OPTIONS FOR OUTFLOW TO WCAS FOR CURRENT ZONE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

*** note: the following fields are repeated on the same record for *** *** each conveyance canal (MIAMI, NNR, WBP, HILL) k = 1 to 4 ***

1–6	limit_reg_rel_glades(k,j,1)	A6	Options for determining conditions for regulatory releases from LOK to appropriate WCA for NORMAL Operations. SCHED – use appropriate (highest) calendar based flood control schedule for downstream WCA plus an offset input earlier as the maximum stage allowed for flood control discharges from LOK via EAA conveyance canal; ALTSCH – use an alternate calendar based schedule (last schedule input for each WCA) as maximum stage in downstream WCA allowed for regulatory releases from LOK. Typically the MAX of flood control schedule is used; STGTRG – appropriate stage targets in downstream WCA are used as condition for PUMPING flood control releases from LOK into WCA. If stage in downstream WCA is below the target then flood control releases are PUMPED, otherwise use gravity if GRAV option is used. The ALTERNATE calendar based schedule plus offset is used as limit for flood control releases from LOK if LOK stage is above pulse zone. for non rain–driven ops; NSM targets + 0.5 ft as limit for rain–driven operations.
7–8	blank	2X	

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39. ADDITIONAL OPTIONS FOR OUTFLOW TO WCAS FOR CURRENT ZONE FOR LOK DEVIATION OPS (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and *** current zone is a flood control zone or a pulse zone. ***

*** note: the following fields are repeated on the same record for ***
*** each conveyance canal (MIAMI, NNR, WBP, HILL) k = 1 to 4 ***

1–6	limit_reg_rel_glades(k,j,2)	A6	Options for determining conditions for regulatory releases from LOK to appropriate WCA for DEVIATION Operations. SCHED – use appropriate (highest) calendar based flood control schedule for downstream WCA plus an offset input earlier as the maximum stage allowed for flood control discharges from LOK via EAA conveyance canal; ALTSCH – use an alternate calendar based schedule (last schedule input for each WCA) as maximum stage in downstream WCA allowed for regulatory releases from LOK. Typically the MAX of flood control schedule is used; STGTRG – appropriate stage targets in downstream WCA are used as condition for PUMPING flood control releases from LOK into WCA. If stage in downstream WCA is below the target then flood control releases are PUMPED, otherwise use gravity if GRAV option is used. The ALTERNATE calendar based schedule plus offset is used as limit for flood control releases from LOK if LOK stage is above pulse zone. for non rain–driven ops; NSM targets + 0.5 ft as limit for rain–driven operations.
7–8	blank	2X	

*** NOTE_LOK_other: The following records are used for non pulse and non flood control zones for Lake Okeechobee. The order of input for non pulse and non flood control zones for Lake Okeechobee are hard coded in the SFWMM as follows: ***

n_fc_zones+1	ASR Injection Line
n_fc_zones+2	North Storage Injection Line
n_fc_zones+3	EAA Storage Injection Line
n_fc_zones+4	ASR Retrieval Line
n_fc_zones+5	North Storage Retrieval Line
n_fc_zones+6	LOK Min Estuary Demand Line using Dry or Normal Forecast
n_fc_zones+7	LOK Min Estuary Demand Line
n_fc_zones+8	LOK Stage for Backflow from St Lucie Basin
n_fc_zones+9	LOK Stage for Backflow from Caloosahatchee Basin
n_fc_zones+10	Upper Line for Water Supply Backpumping to LOK
n_fc_zones+11	Lower Line for Water Supply Backpumping to LOK
n_fc_zones+12	Baseline ZONE C line–used in LOK drawdown scenarios

40. BREAKPOINT DAYS FOR NON PULSE AND NON FLOOD CONTROL ZONES FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK and current zone is a flood control zone or a pulse zone. ***

1–	nbrkpt(i,j)	free	number of breakpoints in schedule for bottom of zone
	mthreg(k)	free	month of breakpoint day

```
        idayreg(k)                    free    day of breakpoint day

   ***  note: mthreg(k) and idayreg(k) are repeatedly read in alternating succession for   ***
   ***        the current record up to nbrkpt(i,j) number of pairs. These months and days  ***
   ***        are then used to populate the iregjul(i,j,k) array in julian format.        ***

-------------------------------------------------------------------------------------------------------------
41. BREAKPOINT STAGES FOR NON PULSE AND NON FLOOD CONTROL ZONES FOR LOK (1 record total)
-------------------------------------------------------------------------------------------------------------

   ***  note: this record is read in only if stor_area_name(i) = LOK and  ***
         current zone is a flood control zone or a pulse zone.       ***

1-      regstg(i,j,k)                 free    stage value of breakpoint day read from 1 to nbrkpt(i,j) corresponding
                                                to dates above

-------------------------------------------------------------------------------------------------------------
   ***  NOTE_nzone(i)_LOK: Set of records 11 through 39 is repeated for each pulse or flood control ***
   ***                     zone making up nzone(i) for stor_area_name(i) = LOK. Set of records 40   ***
   ***                     to 41 is repeated for each non pulse and non flood control zone making   ***
   ***                     up nzone(i) as listed above (NOTE_LOK_other)                             ***
-------------------------------------------------------------------------------------------------------------
42. BREAKPOINT DAYS FOR DROUGHT WATCH LINE FOR LOK (1 record total)
-------------------------------------------------------------------------------------------------------------

   ***  note: this record is read in only if stor_area_name(i) = LOK  ***

1-      nbrkpt_ssmwt                  free    number of breakpoints in schedule
        mthreg(k)                     free    month of breakpoint day
        idayreg(k)                    free    day of breakpoint day

   ***  note: mthreg(k) and idayreg(k) are repeatedly read in alternating succession for    ***
   ***        the current record up to nbrkpt_ssmwt number of pairs. These months and days  ***
   ***        are then used to populate the iregjulwt(k) array in julian format.           ***

-------------------------------------------------------------------------------------------------------------
43. BREAKPOINT STAGES FOR DROUGHT WATCH LINE FOR LOK (1 record total)
-------------------------------------------------------------------------------------------------------------

   ***  note: this record is read in only if stor_area_name(i) = LOK  ***

1-      regstgwt(k)                   free    stage value of breakpoint day read from 1 to nbrkpt_ssmwt corresponding
                                                to dates above

-------------------------------------------------------------------------------------------------------------
44. BREAKPOINT DAYS FOR DROUGHT WARNING LINE FOR LOK (1 record total)
-------------------------------------------------------------------------------------------------------------
```

*** note: this record is read in only if stor_area_name(i) = LOK ***

1–	nbrkpt_ssmwn	free	number of breakpoints in schedule
	mthreg(k)	free	month of breakpoint day
	idayreg(k)	free	day of breakpoint day

*** note: mthreg(k) and idayreg(k) are repeatedly read in alternating succession for the current record up to nbrkpt_ssmwn number of pairs. These months and days are then used to populate the iregjulwn(k) array in julian format. ***

---

45. BREAKPOINT STAGES FOR DROUGHT WARNING LINE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK ***

1–	regstgwn(k)	free	stage value of breakpoint day read from 1 to nbrkpt_ssmwn corresponding to dates above

---

46. BREAKPOINT DAYS FOR SSM LINE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK ***

1–	nbrkpt_ssm	free	number of breakpoints in schedule
	mthreg(k)	free	month of breakpoint day
	idayreg(k)	free	day of breakpoint day

*** note: mthreg(k) and idayreg(k) are repeatedly read in alternating succession for the current record up to nbrkpt_ssm number of pairs. These months and days are then used to populate the iregjul1(k) array in julian format. ***

---

47. BREAKPOINT STAGES FOR SSM LINE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK ***

1–	regstg1(k)	free	stage value of breakpoint day read from 1 to nbrkpt_ssm corresponding to dates above

---

48. BREAKPOINT DAYS FOR MIN SSM CREDIT LINE FOR LOK (1 record total)

*** note: this record is read in only if stor_area_name(i) = LOK ***

```
1-      nbrkpt_ssm1                 free    number of breakpoints in schedule
        mthreg(k)                   free    month of breakpoint day
        idayreg(k)                  free    day of breakpoint day

   ***  note: mthreg(k) and idayreg(k) are repeatedly read in alternating succession for   ***
   ***        the current record up to nbrkpt_ssm1 number of pairs. These months and days  ***
   ***        are then used to populate the iregjul2(k) array in julian format.           ***

-------------------------------------------------------------------------------------------------------------
49. BREAKPOINT STAGES FOR MIN SSM CREDIT LINE FOR LOK (1 record total)
-------------------------------------------------------------------------------------------------------------

   ***  note: this record is read in only if stor_area_name(i) = LOK  ***

1-      regstg2(k)                  free    stage value of breakpoint day read from 1 to nbrkpt_ssm1 corresponding
                                              to dates above

-------------------------------------------------------------------------------------------------------------
BEGIN nzone(i) loop for areas other than LOK for each j, 1 to nzone(i); see NOTE_nzone(i)_not_LOK
-------------------------------------------------------------------------------------------------------------
50. BREAKPOINT DAYS FOR SCHEDULE ZONE FOR WCAS (1 record total)
-------------------------------------------------------------------------------------------------------------

   ***  note: this record is read in only if stor_area_name(i) is not equal to LOK  ***

1-      nbrkpt(i,j)                 free    number of breakpoints in schedule for bottom of zone
        mthreg(k)                   free    month of breakpoint day
        idayreg(k)                  free    day of breakpoint day

   ***  note: mthreg(k) and idayreg(k) are repeatedly read in alternating succession for   ***
   ***        the current record up to nbrkpt(i,j) number of pairs. These months and days  ***
   ***        are then used to populate the iregjul(i,j,k) array in julian format.        ***

-------------------------------------------------------------------------------------------------------------
51. BREAKPOINT STAGES FOR SCHEDULE ZONE FOR WCAS (1 record total)
-------------------------------------------------------------------------------------------------------------

   ***  note: this record is read in only if stor_area_name(i) is not equal to LOK  ***

1-      regstg(i,j,k)               free    stage value of breakpoint day read from 1 to nbrkpt(i,j) corresponding
                                              to dates above

-------------------------------------------------------------------------------------------------------------
   ***  NOTE_nzone(i)_not_LOK: Set of records 50 through 51 is repeated for each zone making up nzone(i) for  ***
   ***                         stor_area_name(i) is not equal to LOK.                                         ***
-------------------------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------------------------
   ***  NOTE_n_stor_areas: Set of records 2 through 51 is repeated for each area making up n_stor_areas.  ***
```

BEGIN no_add_areas_to_wcas loop for each i, 1 to no_add_areas_to_wcas; see NOTE_no_add_areas_to_wcas

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52. ADDITIONAL AREA NAME AND ZONE DEFINITIONS (1 record total)

1-6	stor_area_name(istor_index)	A6	name of additional area
7-8	blank	2X	
9-13	nzone(istor_index)	I5	total number of operational lines for area
14-19	offset_to_sched(istor_index)	F6.2	offset to operational schedule (non rain-driven operations)
20-24	iopt_for_semcyp_prior_roten	I5	option to use the conveyance canal to supply Big Cypress Seminole demands regardless of marsh conditions in Rotenberger (1-yes, 0-no)

BEGIN nzone(istor_index) loop for each j, 1 to nzone(istor_index); see NOTE_nzone(istor_index)

---

53. BREAKPOINT DAYS FOR SCHEDULE ZONE FOR ADDITIONAL AREA (1 record total)

1-	nbrkpt(istor_index,j)	free	number of breakpoints in schedule for bottom of zone
	mthreg(k)	free	month of breakpoint day
	idayreg(k)	free	day of breakpoint day

*** note: mthreg(k) and idayreg(k) are repeatedly read in alternating succession for the current record up to nbrkpt(istor_index,j) number of pairs. These months and days are then used to populate the iregjul(istor_index,j,k) array in julian format. ***

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54. BREAKPOINT STAGES FOR SCHEDULE ZONE FOR ADDITIONAL AREA (1 record total)

1-	regstg(istor_index,j,k)	free	stage value of breakpoint day read from 1 to nbrkpt(istor_index,j) corresponding to dates above

---

*** NOTE_nzone(istor_index): Set of records 53 through 54 is repeated for each zone making up nzone(istor_index) ***

*** NOTE_no_add_areas_to_wcas: Set of records 52 through 54 is repeated for each area making up no_add_areas_to_wcas ***

---

55. ESTIMATED WATER USE AND RAIN AND ET FOR LOKSA FOR SSM (12 records total, one for each month of the year)

1-	wup0(im)	free	monthly LOKSA demand for use in SSM calculations

```
        wup(im)                         free    monthly LOKSA demand for use in SSM calculations with adjustment for
                                                  demand met by other storage areas (e.g. asr, res, etc.)
        rfp(im)                         free    monthly rainfall on LOK for use in SSM calculations
        etp(im)                         free    monthly et on LOK for use in SSM calculations

-------------------------------------------------------------------------------------------------------------------
56. LOK ET DATA - FOR FORECASTING  (12 records total, one for each month of the year)
-------------------------------------------------------------------------------------------------------------------

   ***  note: this record is read in only if iclimate_opt = 1  ***

1-      totloketvol1(im)                free    Predicted 1 month accumulation of total et volume on LOK (ac-ft)
        totloketvol3(im)                free    Predicted 3 month accumulation of total et volume on LOK (ac-ft)
        totloketvol6(im)                free    Predicted 6 month accumulation of total et volume on LOK (ac-ft)
        avg_demand_lok3(im)             free    Predicted 3 month accumulated demand on LOK (ac-ft)

-------------------------------------------------------------------------------------------------------------------
END OF DESCRIPTION FOR INPUT FILE "lok_wca_oper_sched"
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```